JPR 8621.1A
(Formerly JPG 8621.1)

Johnson Space Center Mishap Response Plan

NA/Safety and Mission Assurance Directorate

July 2005

Verify that this is the correct version before use.

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas

Johnson Space Center Mishap Response Plan

July 2005

Approved by

Original signed 7/6/05
Jefferson D. Howell, Jr.
Director, Johnson Space Center

Revisions and Changes

Revision Letter	Change No.	Description	Date
		Initial Release	November 1999
A		Reflects latest version of the Agency Contingency Action Plan (CAP) for Space Operations (SO), Space Shuttle Program Contingency Plan, and the International Space Station Program Mishap Response Plan. Changed document type from JPG to JPR.	July 2005

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PREFACE

NASA Headquarters requires that each Center have a single mishap response plan, which details and coordinates program and/or institutional responses to major operational mishaps or disasters. The procedures in this document are not intended to be used in response to minor mishaps or events that occur in normal day-to-day business. Follow nominal management procedures and mishap reporting and investigation procedures in those cases.

The Associate Administrator for the Office of Space Operations (AA/OSO) and the Chief Safety and Mission Assurance Officer (CSMAO) at NASA Headquarters must be notified in the event of a Space Operations (SO) mishap. This Plan shall ensure that proper actions are taken in a timely manner if an adverse or potential-high-visibility occurrence, mishap, or situation occurs. The emphasis of this document focuses on immediate action responses and reporting.

Figure 1, page 16 is an overview of how JSC organizations must respond to an SO mishap.

Figure 2, page 17 is an overview of how the JSC Mishap Response Plan is aligned with other contingency plans, including the Agency Contingency Action Plan (CAP) for Space Operations (SO), the Space Shuttle Program Contingency Action Plan, and the International Space Station Program Contingency Action Plan.

Immediate actions described in this Mishap Response Plan, if implemented properly, shall:

Prevent further loss of life, equipment, or property (*mitigation*).

Alert management and the public (*notification*).

Secure the scene for the subsequent investigation (*preservation*).

P.1 Policy

It is JSC's policy to provide guidance for action-planning capabilities and reporting in the event of a mishap or contingency.

P.2 Applicability

This document applies to all JSC organizations, including Ellington Field, Sonny Carter Test Facility, and WSTF sites. This document applies to JSC contractors to the extent specified by contract. The JSC Mishap Response Plan (MRP) shall be used to report a Space Operations *(SO) mishap* or mishap in accordance with applicable NASA requirements.

P.3 Authority

NPR 8621.1, "NASA Procedural Requirements for Mishap Reporting, Investigating, and Recordkeeping," requires mishap response plans within NASA to respond effectively to NASA mishaps, life-threatening emergencies, or natural or human-made disasters in order to mitigate further injury to personnel, or additional damage to, or loss of, equipment or property. It also requires that situations that have the potential to cause a severe mishap, negative mission impact, or generate political or media attention be reported as well.

P.4 References

"Agency Contingency Action Plan (CAP) for Space Operations (SO)," May 13, 2005.
NPD 1040.4, "NASA Continuity of Operations," February 10, 2003.

NPR 8621.1, "NASA Procedural Requirements for Mishap Reporting, Investigating, and Recordkeeping," February 11, 2004.

SSP 07700, Volume VIII, Appendix R "Space Shuttle Program Contingency Action Plan," Revision E, change 68, December 23, 2004.

SSP 50190, "International Space Station Program Contingency Action Plan for JSC," Revision D, June 2003.

JSC 05900, "JSC Emergency Preparedness Plan," Revision D, June 2002.

JPD 1712.1, "Management Notification Policy for Use in the Event of Serious Injury, Illness, or Death," October 20, 2004.

JPD 1040.2, "JSC Emergency Preparedness Program," May 28, 2002.

JSC System Level Procedure 4.5-1, "Document and Data Control," January 2003.

P.5 Definitions

Definitions are contained within the appropriate sections, as required for clarification.

P.6 Responsibility

P.6.1 The JSC Center Director has overall responsibility for implementation of the JSC Mishap Response Plan (MRP) and the JSC Continuity of Operations (COOP) Plans. The JSC MRP shall be revised as necessary to ensure compatibility with and to allocate required support to implement the Agency Contingency Action Plan (CAP) for Space Operations (SO), the Space Shuttle Program Contingency Action Plan (CAP), the International Space Station Program Contingency Action Plan (CAP), and JSC COOP plans. All JSC organizations, including field sites, are responsible for following the requirements in this Plan.

P.6.2 The following abbreviations are used to enhance readability of this document:

AA/OSO: Associate Administrator for the Office of Space Operations

CSMAO: Chief Safety and Mission Assurance Officer

COOP: Continuity of Operations

JSC MRP: JSC Mishap Response Plan

Director, S&MA: Director, JSC Safety and Mission Assurance Directorate

ISS: International Space Station

Organizational Directorate: JSC Directorate Level Organization

Organization Director: Director of JSC Directorate Level Organization

OSO: Office of Space Operations

SOMD: Space Operations Mission Directorate

SSP: Space Shuttle Program

P.7 Measurements

Compliance with this Policy and overall success of this Plan shall be measured through the evaluation of Center metrics provided to the Center Director.

P.8 Cancellation

JPG 8621.1, dated November 1999.

1 INTRODUCTION

The definition of a Space Operations (SO) mishap is any mishap that causes (or close call that has the potential to cause) a major impact to spaceflight operations or prevents accomplishment of a primary mission objective. Additionally, this event must involve JSC-controlled personnel, hardware, support equipment, or facilities OR any personnel, hardware, software, equipment, or facilities that have been integrated with JSC-controlled flight-related systems. A SO mishap can involve a mishap to any JSC space operations or development program, including suspected contingency situations at contractor facilities and/or Government facilities operated under contract. High-visibility close calls require careful consideration (discussed in paragraph 2.0) with good judgment used in the "report or not report" decision process. When in doubt, the general rule is to "report."

The JSC Mishap Response Plan (MRP) includes only the immediate actions that would be performed within the first hours of a SO mishap. It does not describe the mishap investigation board process in detail, except to sketch the options for convening a board, and the process for naming the board chairperson. The JSC Continuity of Operations (COOP) plan may be implemented if the mishap impacts the ability to perform continuing operations at JSC.

A mishap is defined as any unplanned, adverse occurrence or event. A pre-planned course of action to properly respond to a mishap is necessary to prevent further injury or damage, allow for a thorough and complete investigation, and provide rapid and proper communications during a time when uncertainty and misinformation can occur.

1.1 Purpose

This Plan serves to integrate the requirements of all the contingency action plans (CAPs) that exist at JSC, but is not intended to replace any of them. As such, it includes appendixes for personnel at the mishap site or for a particular office or organization to immediately refer to when a SO mishap occurs. The appendices list detailed and specific actions to be taken. Appendices that mirror these specific actions shall be included in all subordinate mishap response plans.

1.2 Scope

You must use this Plan if you have a mishap (or a close call that could have caused a mishap) occurring:

during the spaceflight operations of a NASA Program or JSC Project (for example, Space Shuttle, International Space Station (ISS), crew escape vehicle, etc.), or

on JSC property, or

at a JSC contractor or subcontractor facility, or

at any location in which a JSC employee or JSC-controlled hardware, software, or equipment is involved.

JSC 05900, "JSC Emergency Preparedness Plan," further defines procedures and guidelines to address ground mishaps and emergencies (natural disasters, terrorist attack, etc.). Reference section 3.2.2 of this document.

Situations can arise in which a serious mishap may require simultaneous or interdependent response. The relationship between ground and flight mishaps or emergencies is shown below:

SAMPLE EVENT	JSC MRP AND/OR JSC COOP	JSC 05900 JSC EMERGENCY PREPAREDNESS PLAN	SPACE SHUTTLE PROGRAM CAP	ISS PROGRAM CAP
Weather Disaster or "Weapon of Mass Destruction attack" shuts down JSC Mission Control Center for extended period	JSC MRP activated. Possible activation of the JSC COOP plan. NASA HQ AA/OSO notified.	JSC 05900 addresses JSC institutional response to weather disaster	JSC Mission Operations Directorate activates Mission Support backup plan (COOP plan) Shuttle CAP may be activated if event happens during Shuttle mission or if Mission Support backup plan is not effective	JSC Mission Operations Directorate activates Mission Support backup plan ISS CAP may be activated if Mission Support backup plan is not effective
Space Shuttle Flight Operation Mishap	JSC MRP activated	JSC 05900 activated as needed (Emergency Operations Center operated as command center, for example)	Shuttle CAP activated	
ISS On-Orbit Mishap	JSC MRP activated	JSC 05900 activated as needed		ISS CAP activated
Mishap Involving Both the Space Shuttle and ISS	JSC MRP activated	JSC 05900 activated as needed	Shuttle CAP activated	ISS CAP activated

1.3 Effectivity

The JSC MRP is effective immediately and shall remain in effect until cancelled by the JSC Director.

1.4 Revisions

The Safety and Mission Assurance (S&MA) Director is responsible for maintaining this document. Forward requests for changes in writing to Mail Code NA for review and coordination with the appropriate organizations. This document shall be reviewed yearly in accordance with the provisions of JSC System Level Procedure 4.5-1.

2 NASA MISHAPS AND CLOSE CALLS

NASA has classified mishaps into various categories, depending on their severity. As mishap information is taken forward to management, JSC Organizational Directorates shall indicate severity of the mishap according to its formal "type" category. When in doubt, use the more severe category to begin the reporting process. Below is a list of these categories:

NASA Mishap: An unplanned event that results in injury to non-NASA personnel caused by NASA operations; damage to public or private property (including foreign property) caused by NASA operations or NASA-funded development or research projects; occupational injury or occupational illness to NASA personnel; destruction of, or damage to, NASA property; or NASA mission failure (from NPR 8621.1).

NASA mishaps are categorized as follows:

CLASSIFICATION LEVEL & INVESTIGATION TYPE	PROPERTY DAMAGE	INJURY
Type A Mishap	Total direct cost of mission failure and property damage is $1,000,000 or more, *or* Crewed aircraft hull loss has occurred, *or* Occurrence of an unexpected aircraft departure from controlled flight (except high-performance jet/test aircraft such as F-15, F-16, F/A-18, T-38, and T-34, when engaged in flight test activities).	Occupational injury and/or illness that resulted in: A fatality, *or* A permanent total disability, *or* The hospitalization for inpatient care of 3 or more people within 30 workdays of the mishap.
Type B Mishap	Total direct cost of mission failure and property damage of at least $250,000 but less than $1,000,000.	Occupational injury and/or illness have resulted in permanent partial disability, *or* The hospitalization for inpatient care of 1-2 people within 30 workdays of the mishap.
Type C Mishap	Total direct cost of mission failure and property damage of at least $25,000 but less than $250,000.	Nonfatal occupational injury or illness that caused any workdays away from work, restricted duty, or transfer to another job beyond the workday or shift on which it occurred.
Type D Mishap	Total direct cost of mission failure and property damage of at least $1,000 but less than $25,000.	Any nonfatal OSHA recordable occupational injury and/or illness that does not meet the definition of a Type C mishap.
Close Call	Total direct cost of mission failure and property damage is less than $1,000, *or*	Minor injury requiring first aid which possesses the potential to cause a mishap, *or*

CLASSIFICATION LEVEL & INVESTIGATION TYPE	PROPERTY DAMAGE	INJURY
	An occurrence or condition of employee concern in which there is no property damage but possesses the potential to cause a mishap.	An occurrence or condition with no injury but possesses the potential to cause a mishap.

High-Visibility (Mishaps or Close Calls). Those particular mishaps or close calls, regardless of the amount of property damage or personnel injury, that the Administrator, Chief Safety and Mission Assurance Officer (CSMAO), Center Director, or the Center S&MA Director judges to possess a high degree of programmatic impact or public, media, or political interest including, but not limited to, mishaps and close calls that impact flight hardware, flight software, or completion of critical mission milestones.

In general, a *SO mishap* would most probably result from a Type A or B Mishap, mission failure, or high-visibility close call.

3 RELATED CONTINGENCY PLANNING DOCUMENTS

Each major spaceflight program and project has a detailed mishap response plan describing the specific actions that the program or project would take in case of a serious mishap. Elements of those plans shall not be repeated in this document. If a program, project, or organization does not have a specific contingency plan of their own, they must follow this Plan. Close coordination between JSC and NASA program offices shall ensure alignment between the JSC MRP and NASA Program Mishap Response Plans.

3.1 SOMD Program Contingency Plans

3.1.1 Space Shuttle Program

The Space Shuttle Program document is titled SSP 07700, Vol. VIII, Appendix R, "Space Shuttle Program Contingency Action Plan." The Space Shuttle Program Office Manager (Mail Code MA) is responsible for maintaining this document. Find the most current version of this document at http://sspweb.jsc.nasa.gov/webdata/pdcweb/sspdocs/vol8.pdf.

3.1.2 International Space Station Program

The International Space Station Program document is titled SSP 50190, "International Space Station Program Contingency Action Plan for JSC." The S&MA/Program Risk Office Manager (Mail Code OE) is responsible for maintaining this document. Find the most current version of this document at http://sma.jsc.nasa.gov/mgmt/docs/SSP50190RD.pdf.

3.2 JSC Documents

3.2.1 Directorates and Offices

Some JSC Organizational Directorates and major support contractors have specific response plans in the event of a *SO mishap*. Each of these plans shall be fully compliant with the JSC MRP, "Agency Contingency Action Plan (CAP) for Space Operations (SO)," and JSC 05900, "JSC Emergency Preparedness Plan." Should conflicts or discrepancies arise between these plans and the JSC MRP, the JSC MRP shall take precedence.

JSC Organizational Directorates shall have emergency plans that:

- Address organization emergency planning for their employees.
- Address organization emergency planning for their facilities.
- Address organization contingency response planning in support of all programs and projects.
- Comply with JSC 05900, "JSC Emergency Preparedness Plan."

3.2.2 Ground Mishaps

JSC 05900, "JSC Emergency Preparedness Plan" discusses JSC institutional and ground mishaps. The JSC Emergency Preparedness Program focuses on continuity of the Center's critical infrastructure and is intended to complement the JSC and Program contingency plans by quickly restoring normal business operations. Obtain the most current version of the JSC Emergency Preparedness Plan at http://www6.jsc.nasa.gov/ja/js/js7/emepre.cfm

The JSC COOP plan addresses relocation of senior management in response to ground mishaps which may cause long-term disruption to JSC facilities.

4 ROLES AND RESPONSIBILITIES DURING A *SO MISHAP*

Below are the roles and responsibilities that JSC personnel have in the event of a *SO mishap*. The supporting appendixes in the back of this document provide more detailed information on each of these roles and responsibilities.

4.1 Reporting

4.1.1 Reporting to the JSC Director and SOMD Program Managers

When a serious mishap has occurred or it is possible that a contingency exists, it is imperative that management personnel are rapidly notified so that critical decisions can be made.

Personnel with knowledge of a situation described above are charged with the responsibility to notify their management, so that appropriate action may be initiated. The Organizational Director, or their designees, must be notified so that they may apprise the JSC Center Director, JSC S&MA Director, and appropriate SOMD Program Manager of the situation, and advise appropriate action, as required. At the Organizational Director's discretion, notification of any/all personnel (other than the Center Director) shall be accomplished by one of two methods:

First, the organizational Director/Program Manager can be called directly, if that is what is delineated in the Directorate/Program formal contingency response plan.

Second, the JSC Emergency Dispatch Center at 281-483-3333 can be called, if, as above, that is the procedure called out in the formal Directorate/Program contingency response plan. The dispatchers maintain a current listing of the home/contact phone and pager numbers for all managers and other designated key personnel within each organization. Their services may be employed for notification and information distribution. They are well suited for large-scale notifications (i.e., a long list of people to be called). Carefully compose the notification message, as well as a listing of who is to be notified, on paper before calling. When complete, have the dispatch personnel read the message back, to verify correctness before distribution.

Collect basic information concerning the event/situation (refer to Appendix A), and brief the various JSC and SOMD Program management levels so that an informed decision can be made as to whether this event/situation has the potential to be a *SO mishap*.

The JSC Director and applicable SOMD Program Managers are responsible for verbally reporting a suspected *SO mishap* to the AA/OSO no later than 60 minutes after occurrence. **Accordingly, JSC Organizational Directorates must have contingency procedures that communicate timely and accurate information upward to both the JSC Center Director and the applicable SOMD Program Manager in order to support this timeline.** JSC contractors shall report to their Government contract monitors or program/project interface while still ensuring the 60-minute limit can be observed by the Center Director and applicable SOMD Program Manager.

4.1.2 Reporting to the Safety and Mission Assurance Director

In addition to notifying Program, Organizational Director, and/or Center Director management, also immediately notify the S&MA Director.

The JSC S&MA Directorate can be reached during normal working hours at 281-483-2422. In the event voicemail answers the 281-483-2422 number, the alternate number must be used: 281-244-2914. The 281-244-2914 number, unlike the 281-483-2422 number, uses voicemail as a primary answering function and is monitored 24 hours a day, 7 days a week.

Notification of the JSC S&MA Director serves as an additional and independent method of communication with the Chief Safety and Mission Assurance Officer, who shall interface with the AA/OSO. JSC S&MA has a statutory responsibility to immediately inform other specific Government agencies when an injury or serious mishap has occurred. See Appendix B (and your organizational mishap response plan, if applicable) for the immediate action steps that must be taken. Obtain the Safety Incident Report (Form 1627) at ftp://ftp.hq.nasa.gov/pub/iris/Forms/nf1627.doc or by calling 281-483-4900.

4.1.3 Reporting to the Associate Administrator for the Office of Space Operations

The JSC Director and applicable SOMD Program Managers are responsible for verbally reporting a suspected *SO mishap* to the AA/OSO, no later than 60 minutes after occurrence.

The "Agency Contingency Action Plan (CAP) for Space Operations (SO)," requires dual/parallel reporting to the AA/OSO, of suspected *SO mishaps* by the JSC Center Director and the appropriate SOMD Program Manager (Space Shuttle Program, International Space Station Program, etc.).

Only the AA/OSO or formally designated representative has the authority to declare if the reported mishap or close call is a *SO mishap*.

4.1.4 Reporting to the Chief Safety and Mission Assurance Officer

The S&MA Director shall notify the CSMAO, in accordance with JPR 1700.1, "JSC Safety and Health Handbook," latest revision, and NPR 8621.1, "NASA Procedural Requirements for Mishap Reporting, Investigating, and Recordkeeping," latest revision, dated February 11, 2004. Notification shall be made within 60 minutes for a suspected SO mishap.

4.2 Response

Immediate response to a SO mishap is the responsibility of the JSC Director via pre-approved JSC Directorate organizational mishap response plans. It is the Director's responsibility to ensure all necessary actions are taken to preserve life and prevent further injury, prevent further loss of resources, and secure, safeguard, and impound evidence.

If the SO mishap involves Program (i.e., Space Shuttle, ISS, etc.) assets, the appropriate Program Manager, in close coordination with the JSC Center Director, shall manage the follow-on response.

Response to a serious mishap/situation must be quick, calculated, and well planned to prevent further injury or damage and allow for proper investigation:

Appendix B is to be used by those at the scene to mitigate, notify, and secure the area.

Appendix C is to be used to obtain statements from all witnesses immediately after the mishap scene is secure. Studies show that witnesses develop inaccuracies in statements as more time goes by.

Appendix D is to be used to collect and log data that has been impounded for later use by investigators.

Appendix E is to be used by the JSC Director to help define immediate action items.

Appendix F is to be used by the Public Affairs Office (PAO) to define immediate action items.

Appendix G is to be used to set up the Quick Reaction Teleconference when directed to do so by Headquarters.

Appendix H is to be used as guidance in "casualty notification and support for next of kin."

Appendix I is to be used to activate JSC working groups in order to support the investigation.

4.3 Investigation

The NASA Administrator has the option of appointing an internal or external mishap investigation board. If the Administrator decides not to appoint a board, the AA/OSO can direct the investigation, appoint a board, or delegate the board appointment to the JSC Director.

Regardless of the option employed, the JSC Director shall provide whatever Center resources are needed to support the investigation board. This could include administrative facilities, administrative support, communications, data systems management, and security systems.

The primary purpose for mishap investigation and subsequent corrective action is to prevent similar occurrences and thus improve the safety of NASA operations. The emphasis for mishap investigation should be on discovering root cause-effect relationships from which remedial and corrective actions can be derived. The intent is not to place blame, but to determine how processes and responsibilities may be clarified and/or improved to eliminate errors. Additional purposes for investigations are to determine the nature and extent of the events and its programmatic impact; to improve policies, standards, and regulations; to satisfy the public's right to know; and to resolve any questions associated with the mishap/event.

Board procedures and guidelines are beyond the scope of this document. Documents regarding mishap boards are available from the JSC S&MA Directorate at 281-483-4900.

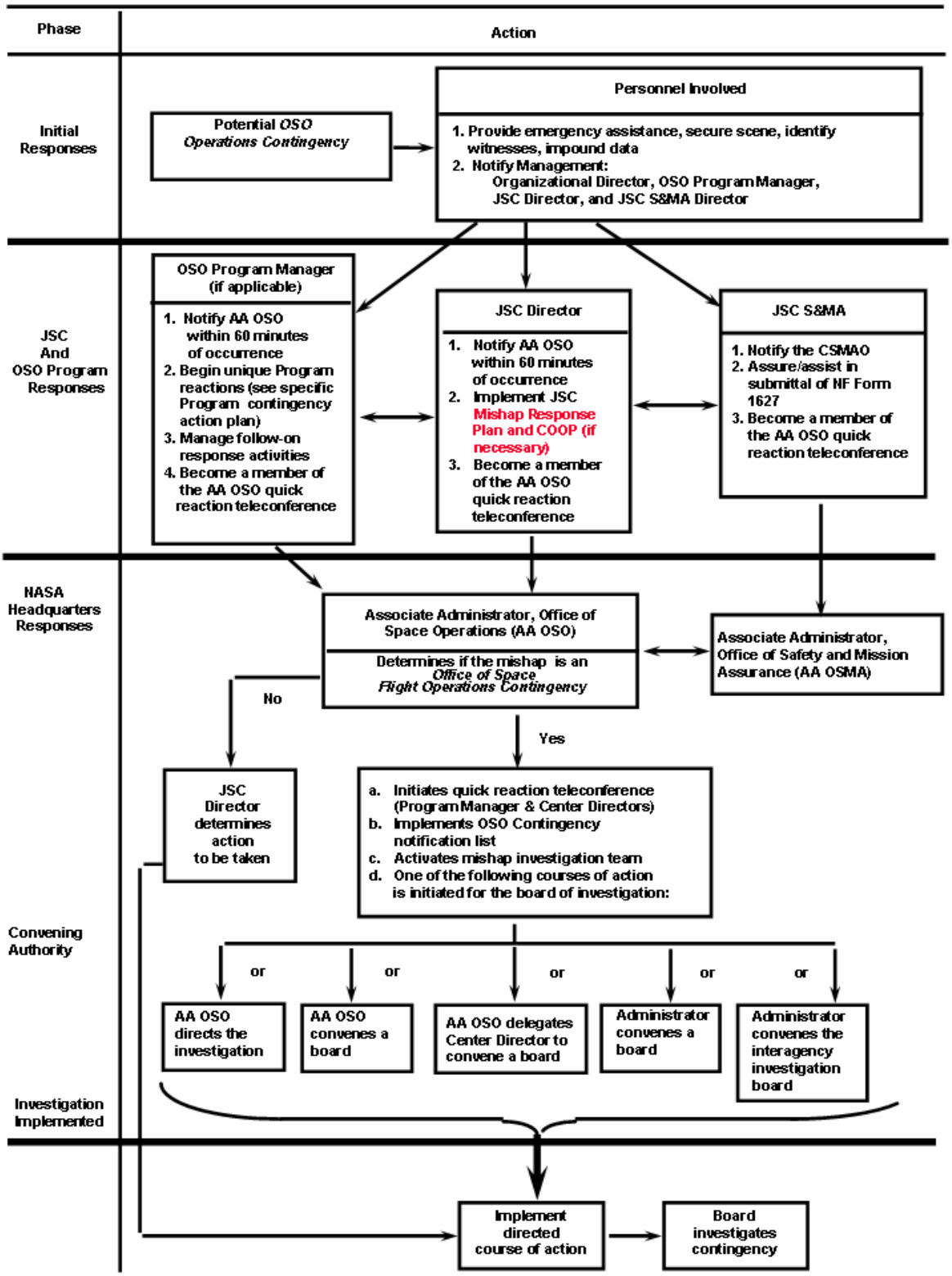

Figure 1 - Overview of How JSC Responds to a Contingency

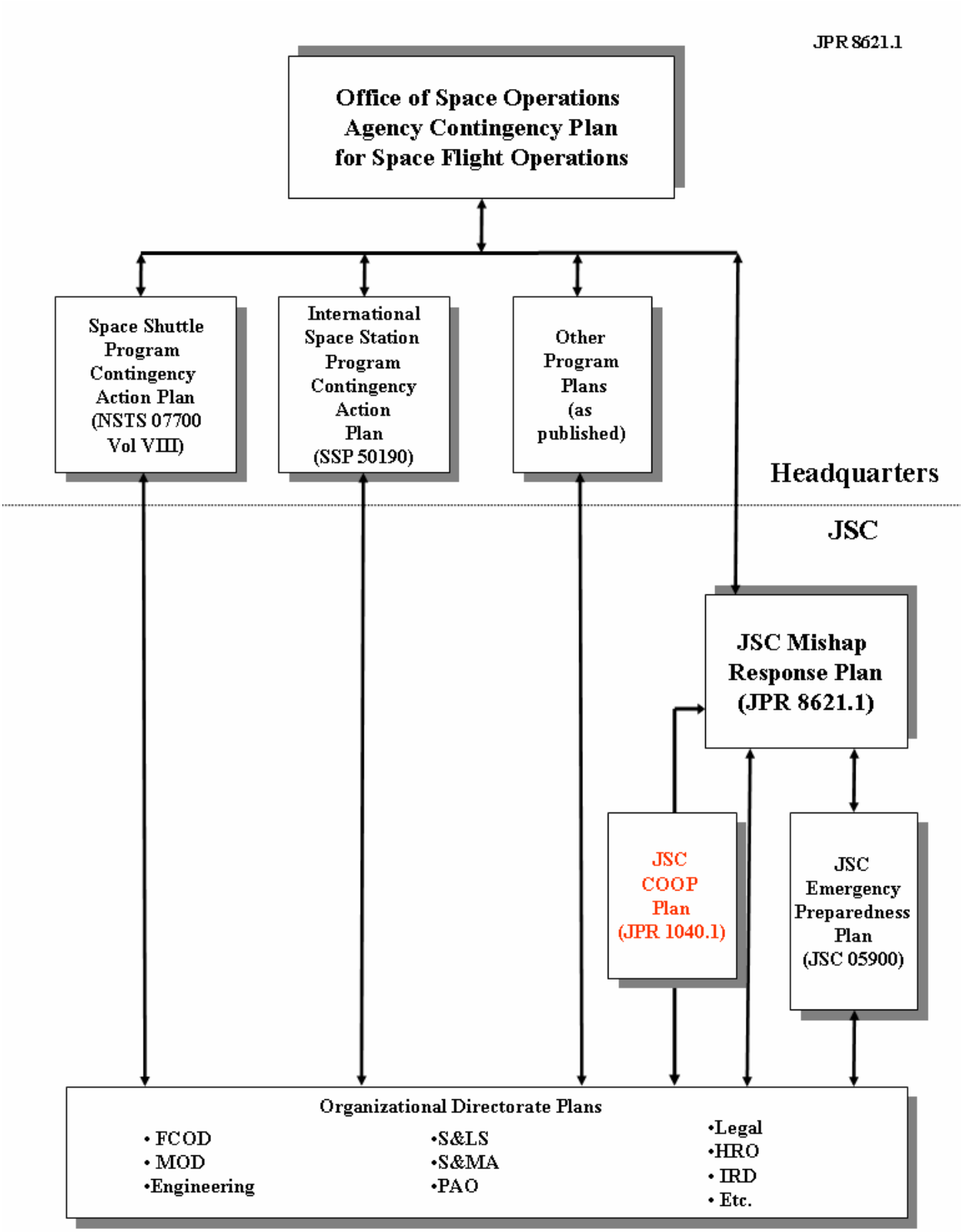

Figure 2 - Overview of How This Plan Reacts with Other Plans

APPENDIX A: GATHERING ESSENTIAL INFORMATION

Gather as much of the information listed below as possible to provide sufficient details to the emergency responders and management:

Time of Mishap: _____

Location of Mishap: _____

Condition of Personnel Involved: _____
_____
_____

Description of Mishap:
_____
_____
_____ _____

Property Damage/Injury to Public: _____
_____
_____

Known Witnesses:

Name	Phone Number(s)
_____	_____
_____	_____
_____	_____
_____	_____

Your name and phone number where you can be immediately reached for further information:

_____ _____
Name Phone number

APPENDIX B: IMMEDIATE ACTION STEPS FOR ANY EMPLOYEE AFTER A MISHAP OCCURS

(MITIGATE, NOTIFY, AND SECURE)

If required, call the appropriate emergency services for immediate fire, medical and security assistance. Prevent further injury to personnel and damage to equipment/property.

If you are uncertain the event is a Space Operations (SO) mishap, begin these steps anyway. Senior management can always terminate the contingency response and notification process if they determine the perceived event does not reach the severity level of an SO mishap.

All JSC employees and managers shall complete all applicable actions during a serious mishap to the fullest extent possible:

Prevent further injury to personnel and damage to equipment/property.

Notify your immediate supervisor or someone above them in the management chain of command, or the individual formally designated in your official mishap response plan. Provide them the information listed in Appendix A.

Note: The JSC Safety Office (281-244-2914) must also be informed immediately of the suspected contingency. This number is monitored 24 hours a day, 7 days a week.

Secure the scene against actions that could impair the investigation (i.e., protect configuration integrity).

Take pictures or draw diagrams especially if the configuration changes before mishap board members arrive.

Protect records, logs, data books, data and voice records/tapes, film, etc.

Identify witnesses to the contingency events and obtain witness statements (use Appendix C). Give them the worksheet to complete while you attend to other required actions. Interview for more specifics as soon as feasible.

Impound any damaged hardware, equipment, debris, data and voice records/tapes, etc. (use Appendix D).

Define software configuration and protect tapes, hard drives, floppy discs, and printouts of software configuration.

Take any measures to prevent recurrence.

Provide security and prevent sabotage.

Return data to the appropriate facility to expedite data processing.

APPENDIX C: WITNESS STATEMENT WORKSHEET

Witnesses are critical to a good investigation. Typically, witness statements shall often constitute one-half the basis for the mishap report. Physical reality, as portrayed by diagrams, photographs, and objects, is the other half.

For the purposes of investigating a mishap, the term witness is a general term referring to persons who may be connected, even remotely, with the mishap. A witness can be an operational member of the flight team or a person who is not directly connected with the operations of the system, but who actually saw or heard some portion of an event, or a series of events, leading up to and including the actual mishap.

It is very important that witnesses of mishaps are identified and their initial statements collected as soon as possible after the event occurs to capture important information. Long delays between a person's observation and relating their observations to investigators are conducive to inaccuracies. This worksheet shall aid in assuring that the minimum required information is obtained and follow-up questions may be asked later by a formal board, if the need arises.

The witness can complete the worksheet. The evidence obtained should be as complete and detailed as possible. It should not be confined solely to the moment of the mishap but should cover all related matters preceding the mishap that may have a bearing on the event.

Be sure to follow the witness statement disclosure procedures (delineated in your mishap response plan) very closely **before** taking the statement of any witness. These statements are somewhat, but not always totally, protected, so be mindful of what the disclosure requirements and Privacy Act limitations are ahead of time.

Make as many copies of the next page and gather as many witness statements as necessary to accurately portray the mishap as observed by the witnesses.

WITNESS STATEMENT WORKSHEET

Statement That Must Be Read to Witnesses at the Start of Their Formal Interview

The purpose of this safety investigation is to determine the root cause(s) of the mishap that occurred on _____, and to develop recommendations toward the prevention of similar mishaps in the future. It is not our purpose to place blame or to determine legal liability. Your testimony is entirely voluntary, but we hope that you shall assist the board to the maximum extent of your knowledge in this matter.

Your testimony shall be documented and retained as part of the mishap report background files but shall not be released as part of the investigation report.

NASA shall make every effort to keep your testimony confidential to the greatest extent permitted by law. However, the ultimate decision as to whether your testimony may be released may reside with a court or administrative body outside NASA.

For the record, please state your full name, title, address, employer, and place of employment.

Date of Interview/Statement: _____

Time: _____

Interviewer or Person Taking Statement:

Name: _____ Phone: _____

Organization/Working Group: _____

Witness:

Name: _____ Phone: _____

Address: _____

_____

Organization/Working Group: _____

Mail Code: _____

Job Title: _____ Years in Job: _____

Employer/Place of employment: _____

_____

Time of Observation: _____

Location at Time of Event:

_____

_____

Activity at Time of Event:

Conditions at Time of Event (i.e., weather, light levels, etc.):

What Did the Witness Observe (see, hear, smell, feel--use memory-jogging questions):

Use the back of this sheet if additional space is needed.

APPENDIX D: LOG OF IMPOUNDED DATA

Efforts to impound records must begin immediately, long before the formal investigation board members arrive on the scene. Direct initial efforts toward identifying and consolidating evidence or data. The investigation shall not be limited to data generated concurrently or as a result of the mishap. It should also include historical, environmental, operational, psychological, and other factors bearing on the situation.

Three general areas of investigation should be saved for the investigation board. These areas are categorized as **material**, **personnel**, and **records**. The **material** area includes all parts, components, and support facilities directly or indirectly involved. The **personnel** area includes all persons associated with the activities immediately surrounding the mishap such as flight crew, launch complex personnel, maintenance personnel, test personnel, operations personnel, range safety personnel, management and supervisory personnel, and witnesses. (See Appendix C to collect this data.) The **records** area includes all records and historical data associated with the specific equipment, operations, and operating personnel.

The organization responsible for impounding records should supply the investigation board with all impounded records and brief the members on status of impoundment as soon as practical after preservation of evidence efforts has started. Data to be impounded may include checkout logs, training tapes, test and checkout record charts, launch records, weather information, telemetry tapes, and other documents essential for investigative evaluation.

Impoundment requires space to hold the records and controls to prevent unauthorized uses or modifications of data. Preplanning should include distribution of information, possible impoundment sites, MRP requirements, and guidelines for program or facility directors so they shall understand the purpose of impounding and their responsibilities to assure compliance at all levels. To understand the breadth of this action, once all data is collected from the various sources, the impoundment area for a Space Operations (SO) mishap could approach the size of a public library.

Your impoundment area must be secure and have shelves or file cabinets adequate to store all expected data, tapes, disks, etc. A filing system is important. It need only be as complex as the volume of data dictates. The key is for all data to be systemically stored, retrieved, issued, tracked, recited and re-stored efficiently, effectively, and accurately. When the investigation is over, all data shall be returned to the originating organization for filing.

The following form can be used to record the location of stored or impounded data.

LOG OF IMPOUNDED DATA

Impound Area: _____

Type of Data	Source	Impoundment Location Bldg./Room/Cabinet	Custodian's Name and Phone Number
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			

APPENDIX E: CENTER DIRECTOR IMMEDIATE ACTIONS

Notify the Associate Administrator for the Office of Space Operations (AA/OSO), within 60 minutes of a suspected Space Operations (SO) mishap. The notification shall include:

- Description of the mishap
- Actions initiated or planned
- Recommended course of action

Inform appropriate members of the JSC Senior Staff, especially the Safety and Mission Assurance Director.

If applicable, notify all appropriate Contractor Senior Management.

Direct the Office of Public Affairs to prepare a statement to the public and JSC employees describing the contingency and immediate steps that shall be taken.

Initiate the Quick-Reaction Mishap Response teleconference (Appendix G) when directed by the Associate Administrator for the Office of Space Operations (AA/OSO) or designee.

If fatalities have occurred:

- Notify and support next of kin of JSC employees. (See Appendix H.)
- Ensure applicable county coroner has been notified.

Establish a Technical Action Center to serve as the official conduit for all activities related to the contingency. The action center shall be placed under the direction of the investigation board when requested by the board chairperson.

Allow the use of existing facilities, organizations, and procedures to the extent feasible for data handling and analyses.

Appoint a mishap investigation board when delegated by Headquarters.

APPENDIX F: PUBLIC AFFAIRS OFFICE (PAO) IMMEDIATE ACTIONS

In the event of a Space Operations (SO) mishap, PAO must facilitate a full and timely flow of accurate, factual information to the public in close coordination with Center, Program, and Agency management. This is essential to preserve integrity and credibility in a time of crisis and also has the potential to contribute significantly to a successful recovery.

The JSC PAO shall provide personnel to support the JSC Action Center (if activated), the on-site investigation, the Center investigation team, and the mishap investigation board. Specifically, PAO shall:

Provide an authoritative spokesperson at JSC and, as rapidly as possible, at the contingency site.

Provide the Center Director with the name of a PAO representative to support the Office of Space Operations for the duration of the contingency.

Provide the person designated by the Center Director with copies of any impounded video, audio, or still photography related to the contingency.

Participate in the Quick Reaction Mishap Response teleconference.

Advise the Center Director on appropriate dissemination of information.

Manage the receipt of news queries related to the contingency and coordinate news releases with Center Director staffs and other Center PAO offices, as necessary.

The announcement that a Space Operations (SO) mishap has occurred must be prompt. It should include what is known regarding the nature and premise of the contingency at the time, what specific action is being taken by NASA to respond to the contingency, whether injuries or fatalities have occurred (if known), and what is being done to obtain additional information. Speculation must be avoided. **Under no circumstance shall the identity of injured or deceased be disclosed without absolute confirmation of death and that next of kin has been notified.**

Take action in accordance with standard NASA policy governing release of information to the media. This Plan does not supersede formal Agency and Center policy.

APPENDIX G: INITIATING THE QUICK REACTION MISHAP RESPONSE TELECONFERENCE

1. JSC shall initiate the Quick Reaction Mishap Response teleconference when requested by the Associate Administrator for the Office of Space Operations (AA/OSO) or designee. For assistance with setting up the teleconference, call the NASA Teleconference Center or fax the teleconference information request using the numbers listed below:

Phone Numbers
NASA Teleconference Service 1-888-707-6272
NASA Teleconference Service fax number 1-800-728-1300

2. As a start, the nucleus of the teleconference should include:
   a. NASA HQ Points of Contact (POC):
      (1) AA/OSO or delegated agent
      (2) DAA/ISS and Space Shuttle Program Manager or delegated agent
      (3) Chief Safety and Mission Assurance Officer
      (4) AA/PAO
      (5) Other staff, as appropriate
   b. Responsible Center Director
      (1) Program Manager(s)
      (2) Other staff, as appropriate

3. Use the following sites and phone numbers to tie in the required participants for the Mishap Response Teleconference:

Note: For locations which are not staffed when the AA/OSO or delegated agent requests the Mishap Response Teleconference, the responsible Center will request in real-time a phone number to use for each of the required teleconferenced participants.

APPENDIX G continued

Location of Teleconference	Teleconference Phone Numbers	Backup Phone Numbers
Space Operations Center	202-358-3264	202-358-4456
[Note: Staffed only from T-3 hours prior to SO (Shuttle, Soyuz, ELV) launch through go for on-orbit operations and L-3 Hours for Shuttle or Soyuz landing.]		
JSC MOD Action Center (Building 30, Room 225A)	281-286-6318	202-483-1074
(Note: Staffed only as required.) Agency Contingency Action Plan for Space Flight Operations - D-5		
KSC Launch Control Center (Room 4P10)	321-861-1110	N/A
(Note: Staffed only from the start of Shuttle Launch Countdown (S0007) through the declaration of "Go for On-Orbit Operations" – approximately Launch + 2 hours.)		
KSC HQS Building (Room 3201) (For on-orbit MRTs)	321-867-8190	
KSC Space Station Contingency Room (SSPF, Room 3036)	321-867-6521	N/A
KSC Expendable Launch Services (O&C Building, Room 2138)	321-867-2038	321-867-4797
(VAFB, Building 840, Room B107)	805-605-1620	N/A
MSFC Shuttle Action Center	256-544-9970	N/A
(Note: Staffed only from 30 minutes prior to start of tanking to Launch+30 minutes.)		
SSC Emergency Control Center (Note: Staffed only as required.)	228-688-3436	228-688-3777
DDMS DOD Support Ops Center	321-853-9161	321-494-9651/52
(Note: Staffed only from T-24 hours prior to Shuttle launch through Shuttle landing.)		
GSFC Network Control Center (Note: Staffed 24 hours a day.)	301-286-6141	
DFRC Executive Conference Room (Note: Staffed only as required.)	805-258-3133	N/A
Dept. of State Operations Room	202-647-1512	
(Note: Staffed only from about 1 hour prior to launch through MECO. Ask for the Shuttle Task Force or Task Force 2.)		

APPENDIX H: CASUALTY NOTIFICATION AND SUPPORT FOR NEXT OF KIN

(Reference JPD 1712.1, "Management Notification Policy for Use in the Event of Serious Injury, Illness, or Death")

It is JSC's policy to provide a safe workplace for all of its employees and for visitors of its facilities. This Directive provides policy for use in the prompt notification of Center management in the event of serious injury, illness, or death occurring in connection with any activities under the cognizance of the Center, thus assuring prompt and effective initiation of those measures Center management deems necessary.

All possible assistance shall be offered from the Center to the next of kin; and if non-NASA personnel are involved, to the employing agency or organization.

Designated officials of the Center shall make these notifications and offers of the Center's assistance under the direction of Center management.

	ACTION REQUIRED
Organizational Director	Provides for the safety, treatment, and comfort of involved personnel. Obtain information on the employee's family status: Were they accompanying the employee on TDY? Are they causalities also? Do they need assistance to get to hospital? Do they need assistance to get home? Do they need medical assistance due to stress of the situation? (Arrange transportation to their medical facility if desired.) Have trained personnel meet and comfort family members. Establish a quiet area where family members can wait for additional information on employee's status or while waiting to meet NASA officials. Escort family members while in NASA facilities.
Safety and Mission Assurance Director	Notifies CSMAO, if circumstances warrant. Reports the incident by telephone or in person to the Area Office of OSHA within 8 hours after the death of any employee from a work-related incident or the in-patient hospitalization of 3 or more employees as a result of a work-related incident.
Center Director	Provides for prompt notification of NASA Administrator and other key Headquarters officials. Arranges, with the help of the Organizational Directorate Line Organization or program manager, for notification of family, next of kin, or if appropriate, other agencies or organizations. May also delegate the notification of family or next of kin to an Employee Assistance Program Counselor or solicit the Counselor's assistance in the notification process.
NASA Headquarters, the Center Director, or his designee	Provides for notification of other agencies or responsible organizations.

APPENDIX I: JSC Working Groups

The Office of the Chief Engineer and the Safety and Mission Assurance Directorate maintain rosters for JSC working groups that will support the SO mishap investigation.